A Large Aggregate Cutblock in the Heller/Tranquille Creek Watersheds Northwest of Kamloops

Complaint Investigation 990213

FPB/IRC/48

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The Investigation

Background

This complaint was about a proposed cutblock located in the Deadman River and Tranquille River watersheds. The watersheds are approximately 50 kilometres northwest of Kamloops, in the Kamloops Forest District and within the area covered by the Kamloops Local Resource Management Plan (LRMP). The Deadman watershed covers 151,000 hectares and includes several major tributaries. The Tranquille River watershed covers 48,000 hectares and is designated as a community watershed. Both rivers are tributaries to the Thompson River.

In the 1980s, the Skeetchestn Indian Band (the complainant) voluntarily halted fishing in the Deadman River due to declining salmon stocks. The Band worked with the Department of Fisheries and Oceans to inventory fish stocks, and established its own hatchery on the Deadman River. In 1990, heavy rainfall resulted in large flows within the river system that caused considerable damage to fish habitat along the Deadman River.

Weyerhaeuser (the licensee) proposed cutting permit (CP) 615 in their 1997 forest development plan. The proposed development is an aggregate block of 1,245 hectares, including reserves and previously harvested areas. The block straddles the Heller Creek and Tranquille River watersheds. Heller Creek is a headwater tributary of the Deadman River. Approximately 717 hectares of new harvesting and roads were proposed, about 500 hectares of which is located in the Heller Creek watershed.

The initial planning and locating of the block began in 1995 and involved the licensee and staff from the Ministries of Forests and Environment, Lands and Parks. The intent was to create a large block size as recommended in the *Biodiversity Guidebook*. The interagency group selected the location after a review of watersheds in the district.

Initially, the concept was that the block would be used as an example of adaptive management, with a monitoring program to facilitate learning from practices on the block. The proposed goals of the project, first outlined in 1995, included research opportunities for comparing the large trial block with smaller, typical block sizes and to monitor wildlife populations, wildlife tree patches and hydrological impacts in nearby Heller Creek. However, funding was not provided, so the adaptive management aspect was abandoned prior to approval. Nevertheless, stations were established for monitoring channel changes and water flow in Heller Creek after harvesting.

In 1997 an information package was sent to interested parties, including the complainant. The package described the proposal for the block and included a rationale for large aggregate blocks prepared by the Ministry of Forests' regional ecologist. The cutblock was approved in the 1998 forest development plan and the silviculture prescription was approved in 1999.

The complainant expressed concerns in its response to the 1998 forest development plan about wildlife and water issues relating to harvesting proposed in the Band's traditional territory. Further comments about CP 615 were sent to the licensee and the MOF district manager shortly after the plan was approved. In 1999, the licensee, the forest district and the complainant formed a monitoring/steering committee. Subsequently, the Ministry of Forests provided

funding to the complainant to conduct a cultural heritage overview and a wildlife assessment for CP 615. These were completed in the fall of 1999.

The complaint was filed with the Board in August 1999 and asserted that the proposal for CP 615 inadequately protects forest resources traditionally used by First Nations and that there would be a cumulative impact from the block in conjunction with harvesting for beetle salvage in adjacent watersheds. In addition to impacts in the Heller Creek watershed, the complainant was also concerned with the downstream impacts to water and fish in the Deadman River.

The Board decided to investigate:

1. Whether the large block proposal met the Code requirements.
2. How the potential impacts were addressed and whether Code requirements were met for the following issues:
    - the potential hydrological impact on the Deadman Creek watershed;
    - the cumulative impact of harvesting the proposed block and harvesting stands in adjacent watersheds attacked by mountain pine beetle;
    - the impacts on the forest resources traditionally used by the complainant.

Since the investigation began, the licensee, MOF and the complainant have continued discussions about the block and hydrologists have completed further assessments and reviews. In the fall of 2000, the complainant agreed to the licensee harvesting several smaller areas within the approved block for CP 615. Further discussions resulted in the licensee agreeing to an increase in retention within the block. A silviculture prescription amendment is being prepared for those changes. Despite a level of satisfaction with some of the proposed amendments, the complainant would still like to see greater protection of riparian areas.

INVESTIGATION FINDINGS

1.0 Did the large block proposal comply with Code requirements?

Section 11 of the *Operational Planning Regulation* of the *Forest Practices Code of British Columbia Act* (the Act) requires that cutblocks must not exceed 40 hectares in size in the Kamloops Forest Region, unless a higher level plan specifies that cutblocks may be larger. The Kamloops LRMP did not specify a larger block size. The *Operational Planning Regulation* permits exceptions to the maximum size in section 11(3)(b)(ii), which authorizes the district manager to approve a larger cutblock if the stand level structural characteristics and the size of the block are consistent with the temporal and spatial characteristics of natural openings[1] in the applicable natural disturbance type.[2]

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[1] In the *Biodiversity Guidebook*, the definition of a patch is not restricted to cutblocks. Patches created by a natural disturbance such as fire should also be considered in the distribution assessment.

[2] Natural disturbance type is an ecological description used in the *Biodiversity Guidebook* to differentiate areas at the landscape level. The province is divided into different areas based upon the type of natural disturbance that most influences the forest (e.g., fire, insects, wind or disease) and the frequency and extent of that disturbance.

1.1 Stand structure

Large blocks approved under section 11(3)(b)(ii) of the *Operational Planning Regulation* must have stand structures consistent with natural openings. However, there are no requirements for specific levels of retention. The *Biodiversity Guidebook* recommends retaining wildlife tree patches and coarse woody debris within a block to provide for stand structure. The *Biodiversity Guidebook* provides recommendations for levels of wildlife tree retention based on the amount of area within a landscape unit that is available for harvest and the level of harvesting that has already occurred. The guidebook does not recommend specific levels of coarse woody debris. Recommendations from the *Biodiversity Guidebook* are not legal requirements.

The retention level for wildlife trees required by the Kamloops district was reduced from nine percent to six percent in October 1997, following a review of retention levels over the district. However, the regional ecologist's rationale for large aggregate blocks recommended that 15 to 20 percent of the area of large blocks should remain as long-term retention until the area provided mid-seral habitat.

Under the approved silviculture prescription for CP 615, about 11 percent of the gross area of the aggregate block would be retained in wildlife tree patches and riparian management areas. This level of retention is consistent with the *Biodiversity Guidebook* recommendations. An additional nine percent of the gross area of the aggregate block was proposed to be retained as mature leave areas for a total retention of 20 percent of the gross area of the aggregate block, including the previously harvested cutblocks. The licensee planned to harvest the mature leave areas once the cutblock had greened up. However, the district manager stated that these areas would be assessed for their suitability to contribute to the landscape level objectives for long-term old-growth management areas. As a result of discussions with the Band in the fall of 2000, the licensee proposed adding an additional five percent retention to mature leave areas, bringing the total retention to about 25 percent of the gross area of the aggregate block.

Structure is also addressed with management for coarse woody debris. The silviculture prescription prescribes maintaining or increasing the current level of coarse woody debris on the block.

The original proposal for CP 615 is consistent with the *Biodiversity Guidebook* wildlife tree patch recommendations and district requirements and also provides for maintaining current levels of coarse woody debris. The revised cutblock proposal is consistent with the regional ecologist's rationale. The proposal meets the requirements for maintaining structural characteristics in large blocks.

1.2 Temporal and spatial distribution of patches

Cutting permit 615 is located within natural disturbance type 3, which is an ecosystem with frequent stand-initiating disturbances. It is a plateau landscape dominated by lodgepole pine stands. Historically, forest fires and insects have created large openings in these ecosystems. For these areas, the *Biodiversity Guidebook* recommends that 60 to 80 percent of the forest area in a landscape unit should be in patches 250 to 1,000 hectares in size to be consistent with a natural pattern of patch sizes. A 2,000-hectare protected area is located immediately adjacent to the eastern edge of the block.

The district manager referred to forest cover maps to determine whether the proposed cutblock would be consistent with the temporal and spatial distribution of natural openings. This is consistent with General Bulletin 20 - Cutblock Size, which states that a visual estimate from mapsheets showing historic and current forest cover patterns may be adequate to meet the requirements of section 11 of the *Operational Planning Regulation*. It states that a visual method is most appropriate in areas where a policy of small blocks has been followed in the recent past. However, it also advises that a more detailed analysis should be undertaken at some point.

Given that the recommended patch size distribution is weighted toward large blocks of 250 to 1,000 hectares, and that there is a history of smaller block sizes, the Board accepts that referring to a map was adequate in this case to determine that CP 615 would not exceed the recommended percentage of large blocks on the landscape both spatially and temporally.

Finding #1:

The proposed plan for CP 615 met the requirements of section 11(3)(b)(ii) of the *Operational Planning Regulation*. The cutblock is consistent with the structural, temporal and spatial characteristics of natural openings.

2.0 Were Code requirements met in addressing potential impacts?

2.1 Hydrological impacts

The complainant's hydrological concerns about CP 615 extend to the area downstream from the Heller Creek watershed. Heller Creek is a tributary of Criss Creek, which is a tributary of the Deadman River. The complainant is concerned about the potential impact harvesting would have on the Deadman River and its fish population. There is also concern about the hydrological impact on the Tranquille River watershed that is not part of the Deadman system. The level of development in a watershed is often referred to in terms of the equivalent clearcut area (ECA), which is the area within a watershed that has been clearcut, with a reduction factor to account for hydrological recovery due to forest regeneration. There are no requirements or recommendations in the Code for ECA levels for areas that are not community watersheds. For community watersheds such as the Tranquille, the *Community Watershed Guidebook* recommends a maximum ECA of 30 percent. However, the recommendations from a watershed assessment override the guidebook recommendations.

Section 14 of the *Operational Planning Regulation* requires that a watershed assessment be completed within the three years prior to a forest development plan being submitted for:

- an area that is within a community watershed;
- a watershed that has significant fisheries values or licensed domestic water users and significant watershed sensitivity, as determined by the district manager and a designated environment official; or,
- an area where a district manager determines that watershed assessment is necessary.

The Deadman River watershed is not a community watershed and neither the district manager nor the environment official made any determinations that would require a watershed assessment. Therefore, there was no Code requirement for a watershed assessment. However,

the Kamloops LRMP identified Deadman River as a priority watershed for an assessment because of fisheries values and issues involving water supply for domestic and irrigation purposes. The licensee completed an assessment for Heller Creek as part of the CP 615 proposal.

The Tranquille River is a separate system from the Deadman River and flows directly into the Thompson River. Approximately 200 hectares of the proposed block is within the Tranquille River community watershed and a watershed assessment was required by the Code. A watershed assessment, a watershed condition report and a reconnaissance watershed assessment were completed in 1996, 1997 and 2000 respectively. These assessments indicated that the ECA for the watershed was relatively low and there were no major concerns to limit forest development at that time.

Studies following the large flood in the Deadman River system in 1990 found that the river had been impacted by the removal of riparian vegetation, largely because of agricultural activities. This had caused channel instability. Primary concerns are the changes in peak flow, sediment levels and stream temperature. A 1995 report completed for the Department of Fisheries and Oceans concluded that increased sedimentation might be a more important factor affecting the stability of the Deadman River than the magnitude of floods. Criss Creek was identified as a major source of coarse bedload material and suspended sediment into the Deadman River.

Several hydrological assessments and reviews have been completed on the Deadman River system. In November 1997, the licensee completed a channel assessment of Heller Creek. The assessors concluded that, with the development of CP 615, the peak flow hazard index would increase from low to moderate, but no significant impacts to Heller Creek were predicted.

A 1998 watershed assessment of all sub-basins in the Deadman watershed determined that the ECA in Heller Creek would increase to 32 percent with CP 615. This is a weighted value (actual value was 22 percent) because the block is in the upper portion of the watershed where there is greater potential for development to affect peak flows. The report acknowledged that the previous channel assessment for Heller Creek, completed in 1997, concluded that such an increase in ECA should not result in detectable impacts.

In 2000, a hydrologist working for the complainant reviewed stream flow data and determined that the contribution Heller Creek made to the 1990 flood in the Deadman River was greater than previously thought. He concluded that the potential impact from a change in peak flow could be significant because of the cumulative impact on the Deadman River.

Shortly after this, a channel assessment report for Criss Creek was completed and indicated a low likelihood that CP 615 would negatively impact Criss Creek. It concluded that there was a natural source of sediment from the valley walls in lower Criss Creek, but the main source of sediment was upstream from where Heller Creek enters Criss Creek. The sediment source in upper Criss Creek would not be affected by the development of CP 615.

At the request of the district manager, the MOF regional hydrologist reviewed the existing hydrological reports and conducted an analysis of the worst-case scenario for changes to peak flow from CP 615. The regional hydrologist concluded that even this scenario should not make a significant change to flows in Criss Creek. However, to further minimize risk, the regional hydrologist recommended that development proceed slowly and also that changes to Heller Creek during development should be monitored. The hydrologist also recommended that riparian protection be maximized to maintain natural drainages, protect stream banks and retain shade. The regional hydrologist clarified that these comments related to ensuring

appropriate attention be given on a site-specific basis to identifying the location of watercourses, the type of work taking place within and near them and the season of work. The licensee has recently increased proposed riparian retention levels around watercourses, following a field assessment with a biologist representing the complainant. This will reduce the proposed new harvesting and roads in the Heller Creek watershed to approximately 440 hectares. In addition, three permanent channel monitoring stations have now been established within the Heller Creek channel and a streamflow gauge has been re-established.

In the Board's opinion, there has been an adequate assessment to determine that the hydrological impact from CP 615 should not be significant.

Finding #2:

The hydrological assessments completed at the time of approval met Code requirements. The potential hydrological impacts from CP 615 have been adequately assessed and found not to be significant.

2.2 Cumulative impacts from beetle harvesting

The complainant was concerned about the potential cumulative impacts from the harvesting of trees killed by mountain pine beetle in adjacent watersheds. Currently, the edge of the mountain pine beetle infestation is about six kilometres from CP 615. Stands between the infestation and CP 615 are estimated to have a moderate susceptibility to attack by the beetles. There has been salvage harvest of beetle-killed trees in the Tranquille watershed and adjacent areas. While the largest area of infestation in the Tranquille watershed has been brought under control, forest district staff expect the beetle infestation closest to CP 615 to expand in 2001 and there is a moderate risk of additional large beetle infestations within the vicinity of CP 615.

Approximately 1,000 hectares have been impacted by beetles in the lower Tranquille drainage. There is some potential for cumulative hydrological impacts from salvage harvesting and the harvesting of CP 615 in the Tranquille watershed. However, watershed assessments have determined that since the ECA is low, additional harvesting is not a concern.

There are also patches of beetle-attacked trees being harvested in lower Criss Creek in mixed fir/pine stands, and some stands in the lower elevations of Heller Creek are being salvage logged. Although upper Heller Creek forests are comprised of pine, there are currently no beetle infestations there. The watershed assessments did not predict any detectable impacts with the proposed development. However, following the harvesting of CP 615 the upper Heller Creek watershed may be at, or approaching, a hydrologically significant level of development. It should be assumed that if a large-scale beetle control and salvage program is required in the upper Heller Creek watershed in stands outside of the cutting permit, there could be an adverse cumulative impact on the Heller Creek watershed or downstream in the Deadman River. The district manager advised the Board that if the beetles spread toward CP 615 over the next few years, the district will review plans in co-operation with the licensee and address harvest patterns on the landscape if necessary.

Finding #3:

The current level of beetle-salvage in adjacent watersheds should not significantly add to the impact CP 615 will have on the landscape. However, if additional large-scale beetle salvage is required within the upper Heller Creek watershed, there may be a potential for adverse cumulative impacts.

2.3 Impacts on other forest resources

The complainant was concerned that the proposed block would have significant impacts on resources that had traditionally been used in the area. These included wildlife, medicinal plants and areas of spiritual importance.

Under the Code, much of the consideration for managing wildlife and plant species comes through implementing the biodiversity recommendations discussed earlier and through requirements for riparian management areas on streams, lakes and wetlands. Plans must also be consistent with the requirements of the identified wildlife management strategy if a wildlife habitat area has been established. There were no wildlife habitat areas established for any wildlife or plant species in this area. The management of spiritually important areas is not clearly defined in the Code, although the preamble to the Act identifies spiritual values as one of several values to be balanced in achieving sustainable use of the forests. As a forest resource, spiritual values would need to be considered by the statutory decision-maker.

To protect aquatic resources and terrestrial riparian habitat, section 60 of the *Operational Planning Regulation* requires riparian management areas be established on streams, lakes and wetlands. The width of the riparian management areas proposed for CP 615 met the requirements of the Code. In some areas of the block, the plan for riparian management areas exceeded Code requirements.

An archaeological overview assessment was completed for the LRMP and an archaeological impact assessment was completed for the silviculture prescription. Neither of these studies identified any significant archaeological issues. However, the complainant was not satisfied that these assessments had adequately considered its concerns. After the silviculture prescription had been approved, the Ministry of Forests provided funding to the complainant to conduct a cultural heritage overview. This was not a Code requirement. The study was done in September 1999 and it indicated that the CP 615 area was traditionally important for hunting in late summer and fall. Also, medicinal plants and berry-picking areas were identified as being important. High elevation points and riparian areas along Heller Creek were important as spiritual sites. The study also identified concerns with impacts to wildlife populations, particularly moose.

Trapper's tea (*Ledum glandulosum*) is the medicinal plant of the most concern to the complainant in this area because of potential impacts from harvesting and increased access by cattle. This plant was found in both the unharvested stands and adjacent cutblocks.

To address areas of concern, the licensee moved the block boundary further back from Heller Creek. This also protected an old trapping cabin traditionally used by Band members. As well, following a field inspection with the complainant in 2000, the licensee agreed to defer

harvesting in many of the trapper's tea patches and to include a buffer around a cliff identified as having important spiritual value. Along with increased retention in riparian areas, approximately 65 hectares of retention was added—reducing the proposed new area of harvesting and roads within the aggregate block to 652 hectares.

A wildlife assessment report, completed in October 1999, confirmed that deer, moose and numerous other species of furbearers and birds use the area. The moose and deer habitat is moderately suitable for spring and summer use. The report recommended consolidation of the proposed wildlife tree patches to create larger patches. The licensee did not act on these recommendations because it considered the sizes of the patches in the existing proposal adequate and felt it was desirable to maintain a good distribution of the wildlife tree patches across the cutblock. The wildlife tree patches were also concentrated on riparian areas, which is where the main retention concerns are for the complainant.

The planning for CP 615 met Code requirements for addressing the forest resources discussed. Retention of structure and habitat in the form of wildlife tree patches, riparian reserves and mature retention areas within the cutblock will be a major factor in the extent to which other resource values are conserved. The district manager was satisfied that the proposal adequately managed and conserved forest resources in 1999. Further steps have since been taken to address the complainant's concerns. The Board considers that the licensee and the forest district have taken adequate measures to assess and address the management of the forest resources within the CP 615 area. The Board also recognizes the productive efforts made by the licensee, the complainant and the district to work together and resolve issues.

Finding #4:

The planning for CP 615 met Code requirements. Adequate measures were taken to assess and address the management of forest resources within the CP 615 area.

CONCLUSIONS

1. The proposed plan for CP 615 met the requirements of the Code for large blocks. It is consistent with the recommendations for structural, temporal and spatial characteristics of natural openings.

2. The potential hydrological impact from CP 615 has been adequately assessed and found not to be significant.

3. The current level of beetle salvage in adjacent watersheds should not significantly add to the impact of CP 615 on the landscape. However, if additional large-scale beetle salvage is required within upper Heller Creek there could potentially be adverse hydrological impacts. If the beetles spread toward CP 615 over the next few years, the district intends to review plans in co-operation with the licensee and adjust harvest patterns on the landscape if necessary.

4. The planning for CP 615 met the Code requirements. Adequate measures were taken to assess and address the management of the forest resources within the CP 615 area.

5. Considering the information and assessments available, it was reasonable for the district manager to be satisfied that the plan for CP 615 would adequately manage and conserve forest resources as required by section 41(1)(b) of the Code Act.

6. The participants have made significant and successful efforts to maintain communication and resolve issues among themselves.

Location of Tranquille Complaint